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Phenocoll Hydrochloride in Malaria.*

BY

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Since the discovery of quinine, and its rational application to the treatment of malarial conditions, many attempts have been made to substitute for this drug—withstanding its great value—other products that might advantageously take its place.

It were certainly idle to name here all the remedies tried for this purpose, and it will suffice to say that, notwithstanding the few successes reported by experimenters, the failures have been frequent enough to cause their abandonment, and that quinine has remained in the mind of the whole medical body as the only sure remedy to be opposed to malarial infection.

While this was true but a day since, will it remain true to-morrow? I believe not; and it is with the greatest confidence that, following my Italian confreres, I present to the French practitioners a new drug, hydrochloride of phenocoll, which appears to me to deserve the closest attention in the therapy of paludean affections, as much by its incontestable anti-malarial virtues as by the fact that absolutely no harmful effects follow its absorption.

I certainly have no desire to place the quinine salts on trial, but it seems useful to

remind the reader of some of the disagreeable effects that follow their use: tinnitus aurium often lasting a very long time, severe gastric pains, very painful erysipelatoid eruptions, are all certain indices of a real intoxication without which, unfortunately, we can hardly obtain durable results. At times, also—not to say, often enough—quinine appears to be of a discouraging inefficacy, so much so as to enable one of my patients to tell me that "for him, quinine amounted to nothing at all." Finally, there are many people who show true idiosyncracies in regard to quinine, and in whom even small doses of the drug may cause serious accidents.

Hydrochloride of Phenocoll (amido-acetparaphenetidin) is a white, crystalline powder, of neutral reaction, soluble in seventeen parts of cold water; its sweetish-bitter taste is not disagreeable, and may easily be concealed in a mixture, an evident point in its favor, especially in pediatric therapy.

After the first experiments of Robert and von Mering, in 1891, had shown the absolute harmlessness of this substance (the latter being unable to cause any untoward reaction in a large rabbit with a dose of 1.50 gm. of phenocoll), Hertel and Herzog successfully utilized

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its antipyretic properties in the treatment of many febrile affections, and Gerhardt, in 1892, was able, in his important work, to ascertain its precise indications as an anti-febrile, an anti-neuralgic and an anti-rheumatic substance. But, under the special point of view which I am taking, namely, its anti-malarial property, it is especially in Italy that the first data were obtained.

Dr. Pietro Albertoni (of Bologna), published the first successful results, which were soon confirmed by a number of others who followed his example, chief among whom I may mention Drs. Pratti (of Ferrara), Novi (of Ravenna), Venturini (of Grosseto), Crescimano (of Ancona), Matarazzo (of Syracuse), and Prof. Cercello, of the University of Palermo. Towards the end of the year 1893 appeared two important memoirs in the *Rassenga Medica*, of Bologna, one by Dr. Vittorio dall'Olio, and the other by Dr. Gicognani. Finally Pucci, quite recently, at the Congress of Rome, spoke in favor of the use of Phenocoll in malaria.

Last of all, we have become acquainted with the observations made by Dr. Clemente Ferreira, in Brazil, who has also recorded a number of successful cases.

To this long list of favorable observations, which should already have caused the admission of phenocoll to the field of current therapeutics, I will add twenty new observations which are absolutely conclusive. I have taken care to submit, as a rule, none but marked and chronic cases of malaria to this treatment; the few exceptions were in cases which, though of recent origin, showed, by their clinical form, an absolute picture of severe malarial intoxication.

Observation I.—A. H., æt. 28; in Algeria since 1891. Taken with malaria on Sept. 9th, 1894. Chills, fever, perspiration; the attack begins at 3 P.M. Patient first seen on Sept. 14th; general muscular pain, cephalalgia, tongue coated, sub-icteric color of conjunctivæ. Spleen slightly hypertrophied, painful on pressure. Gave 1.25 gm. of phenocoll; notwithstanding this there was a slight attack at about 9 P.M., but it was shorter and less violent.

Sept. 15. Phenocoll 1 gm.; no febrile access.
Sept. 16. Phenocoll 1.25 gm. Slight febrile movement at 10 P.M.

Sept. 17. Patient feeling much better; tongue much better, appetite seems to be returning; splenic pain much diminished. Phenocoll 1 gm.

Sept. 18. Patient had a good night; no fever yesterday evening; urine slightly colored. Phenocoll 1 gm.

Sept. 20. Absolute apyrexia; the patient feels entirely well.

This patient was kept under observation until Oct. 5. He had no further febrile attacks and was able to work.

Obs. II.—Maria N., æt. 20, is suckling a baby 5 months old. Comes from one of the most unhealthy points of the surrounding country. Febrile attacks returning every other day, at the same hour. Has taken quinine for about a week; besides the fact that she still has attacks, the medicine makes her ears ring so that she refuses to take any more.

Sept. 14. Patient seen in the middle of an attack; temperature 39.9° (103.8° F.). It began at 6 P.M., and ended at mid-day with profuse perspiration.

Sept. 15. Nothing to note.

Sept. 16. The patient has taken 1 gm. of phenocoll during the night, in two doses; no fever in the morning; she is taken with an access at 2 P.M. Chills slight, the attack is milder and shorter.

Sept. 17. The patient attends to her occupations.

Sept. 18. Took 1.50 gm. of phenocoll during the night. No attack; urine rather dark.

Sept. 19. Nothing to note.

Sept. 20. Patient has taken 1.5 gm. of phenocoll during the night, for the last time. She has no further attack and feels quite recovered. I may add that during all this time she has suckled her child without any inconvenience to the latter.

Until this day, Oct. 20th, the patient has had no more attacks.

Obs. III.—Francoise C., æt. 11. Malarial for two years back; quinine has been employed with success. Now has typical quotidian attacks; has a few concomitant phenomena due to growth, such as juxta-epiphyseal pains, slight cardiac hypertrophy.

Sept. 14. At 6 A.M. a violent febrile access, ending at midday with profuse sweat.

Sept. 15. Child took 0.75 gm. phenocoll during the night. No fever in the morning, but a mild attack at 1 P.M.

Sept. 16. Same dose given at night. Patient found out of bed, is hungry; at 5 P.M. a slight febrile sensation.

Sept. 17. Phenocoll 1 gm. this morning. No attack during the whole day, the pains in the bones much diminished. Biphosphate of lime.

Sept. 18. Same dose this morning. Complete apyrexia, appetite returning.

Sept. 19. Phenocoll 75 cg. Decided improvement. No fever.

Sept. 20. No phenocoll. Good day, but at 6 P.M. a fairly sharp access.

Sept. 21. Phenocoll 1 gm. No attack.

Sept. 22. Phenocoll 75 cg. No fever.

Sept. 23. Phenocoll 50 cg. Child is very cheerful, moves about, is merely rather anemic.

The drug was then stopped, and, up to Oct. 25, there have been no further attacks.

Obs. IV.—Vincent A., æt. 26. Habitually in good health; no hereditary taint.

Sept. 13. At 11 P.M., violent chills, sharp fever, and towards morning abundant sweat.

Sept. 14. Fresh attack at 2 P.M.

Sept. 15. Patient seen for the first time. Tongue coated, cephalalgia and severe splenic pain. Phenocoll 1.5 gm. at 10 o'clock. No attack during the day.

Sept. 16. Night good. General muscular pain; conjunctivæ show a sub-icteric tint. Phenocoll 1.5 gm. A quarter of an hour after taking the last powder, the febrile movement begins and ends at 5 P.M. with profuse sweat.

Sept. 17. Very bad night; insomnia, cephalalgia and violent splenic pain; bilious vomiting, diarrhea. Phenocoll 1.75 gm., and application of tincture of iodine over the spleen. The rest of the day is pretty comfortable; headache.

Sept. 18. Sulphate of magnesia 40 gms. in the morning; phenocoll 1.75 gm. from 11 to 2 o'clock; very light attack at 5 P.M.

Sept. 19. Night good; icterus fairly marked. Phenocoll 1.5 gm.; no fever.

Sept. 20. Lassitude very marked. Phenocoll 2 gms. No fever, the patient gets up.

Sept. 21. Very good night; patient feels much better; icterus becoming less. Phenocoll 2 gms.

Sept. 22. Phenocoll 1 gm.; the appetite is returning, and strength augmenting.

The patient became better and better; resumed work Oct. 1, and until now, Oct. 25, has had no further attack.

Obs. V.—Anna R., æt. 27. Nurses a child 17 months old.

Sept. 13. At 7 P.M. a typical malarial seizure, which the patient describes very clearly.

Sept. 14. No attack; the patient took two glasses of Hunyadi water in the morning.

Sept. 15. At 3 P.M. a new attack, lasting till 8 P.M., when I saw the patient for the first time. General lassitude, cephalalgia, spleen tender on pressure.

Sept. 16. No attack, patient attends to her work.

Sept. 17. Phenocoll 1.25 gm. in the morning; no fever, but in the afternoon a sensation of extreme weariness.

Sept. 18. Nothing of note.

Sept. 19. This is the day of the fever. Phenocoll 1.5 gm.; fever absent; patient feels better; no appetite.

Sept. 20. The patient feels very well; nurses her child without detriment to the latter's health.

Sept. 21. Phenocoll 1 gm.; no attack.

Sept. 22. The patient is quite well. The phenocoll is stopped, and until this day, Oct. 25, there has been no return of the trouble.

Obs. VI.—Josepha M., æt. 24. Nurses an 8 months old child. Three years ago had paludean attacks at Ste.-Barbe-du-Tléla; they lasted for 14 months with more or less prolonged remissions. Treated by quinine. She states that she had very violent ringing in the ears.

Sept. 15. At midday, chills, then fever, and at 4 P.M. abundant sweat. During the attack violent pain in the splenic region and the breast; paroxysmal cough.

Sept. 16. Night fairly good, headache, spleen somewhat enlarged. Phenocoll 1.25 gm. at 9 A.M.; no fever.

Sept. 17. Patient, still much wearied, feels better; splenic pain less severe than yesterday. Phenocoll 1.25 gm. No attacks during the day.

Sept. 18. Patient out of bed; numerous vesicles of herpes upon the lips and nostrils; appetite returning. Phenocoll 1 gm. No fever.

Sept. 19. Patient feels very well; urine normal; no more splenic pain; the secretion of milk remains abundant and the nursing does not appear to suffer. Phenocoll 1 gm. No attack.

Sept. 20. The patient is quite well; attends to her customary pursuits. Phenocoll 1 gm.; no fever.

Sept. 21. Phenocoll stopped: The improvement continues, and the patient up to writing, Oct. 25th, has had no further febrile access.

Obs. VII.—Louis F., an apprentice. Born in Algeria. Already attended by me in the month of August for malarial attacks of a tertian bilious form. Hydrobromate of quinine and mixture containing the arseniated extract of cinchona.

Sept. 14. At 3.30 A.M., a light access; some bilious vomiting.

Sept. 15. Patient is able to go to the workshop.

Sept. 16. In my presence, has a violent attack; abundant emesis.

Sept. 17. Patient went to the workshop.

Sept. 18. Early in the morning, took 1.25 gm. of phenocoll, in two doses. At 8.30 P.M., some yawning and a slight sensation of cold. No access during the day.

Sept. 19. Patient felt well, went to work.

Sept. 20. Phenocoll 1.5 gm. in the morning. Patient was able to go to work; a little lassitude.

Sept. 21. Feels normally.

Sept. 22. Phenocoll, 1.25 gm. in the morning, able to go the work.

Sept. 23. Decidedly better, strength returning.

Sept. 24. Phenocoll, 1.25 gm. in the morning. No attack, the patient stops calling on me.

Sept. 30. New attack; vomiting.

Oct. 1. Nothing of note; boy feels well.

Oct. 2. A fresh and more violent attack.

Oct. 3. Phenocoll 1.50 gm. No fever.

Oct. 4. Boy goes to the workshop.

Oct. 5. Phenocoll 1.5 gm.; no fever.

Oct. 6. Patient feels quite well.

Oct. 7. Phenocoll 1 gm.; no fever.

Up to the present time the boy has had no further febrile accesses, and is in good health.

Obs. VIII.—George F., æt. 14. A brother of the preceding patients. Convulsions during childhood. On August 19th, I was called to attend him during a typical malarial attack. Hydrobromate of quinine and mixture with arseniated extract of cinchona. The febrile accesses continued notwithstanding this, and the boy, by my advice, left Arzew for about ten days.

Sept. 15. At 2 P.M. a febrile access, with slight comatose phenomena. Spleen painful. Temp. 39.8° C. (103.6° F.)

Sept. 16. Feels pretty well. At nine o'clock phenocoll 1 gm. Notwithstanding this, at noon there occurs profuse bilious vomiting. High fever. Temp. 39.6° C. Splenic pain.

Sept. 17. Phenocoll 1 gm. At 2 P.M. slight febrile attack; headache.

Sept. 18. Phenocoll 1 gm. At 2 P.M. a few small chills; in the evening the boy eats well.

Sept. 19. Phenocoll 1.25 gm.; no fever.

Sept. 20. Feels better; splenic pain nearly gone. Phenocoll 1.25 gm.

Sept. 21. Phenocoll 1.25 gm.; no more fever; the boy feels quite well.

Sept. 22. The child goes out and to his work. No phenocoll, no more fever.

Has shown no further malarial symptoms to the present time.

Obs. IX.—Leonie W., æt. 23. Of lymphatic temperament. When 14 years old, at Marnia, had malarial trouble lasting for two years, with more or less marked remissions. In January 1892 had violent facial neuralgia, for which I successfully gave valerianate of quinine. In 1894, in the month of August, the neuralgic pains returned with periods of exacerbation recurring at the same hours. Valerianate of quinine; cured.

Sept. 16. At 9 A.M. a violent febrile seizure. Temp. 39.8° C. Very violent cephalalgia, with a neuralgic point on the right side.

Sept. 17. Phenocoll 1.25 gm. were taken in the morning. No fever, headache. Abundant salivation. At 3 P.M. a slight chill, followed by heat. Temp. 38.9° C.

Sept. 18. Took this morning 1.75 gm. of phenocoll. No fever; no more headache.

Sept. 19. Phenocoll 1.5 gm. No attack. The patient feels quite well.

Sept. 20. Phenocoll 1 gm. No fever.

Sept. 21. No phenocoll. Day good, but towards evening occurs a facial neuralgic pain on the right side.

Sept. 22. Phenocoll 1.5 gm. given again. The day is passed without trouble.

Sept. 23. Phenocoll 1.5 gm. No more neuralgic pain.

Sept. 24. The phenocoll is definitely stopped, and the patient, whom I have frequently seen again, has remained until now free from neuralgia and fever.

Obs. X.—Claude F., æt. 35, a workman in the shops of the F. A. Co. Twelve years ago had violent accesses of fever when the workshops of the company were at Debrousseville. Had to be admitted to the military hospital of Arzew. Hypodermic injections of quinine. Since 1884 has shown no manifestations of malaria.

Sept. 14. Slight sunstroke, chills, fever, then abundant sweat.

Sept. 15. The patient is able to go to the workshop.

Sept. 16. At 7.30 A.M. a very violent attack. Severe cephalalgia. Temp. 39.9° C. Tongue coated. Splenic pain.

Sept. 17. Sulphate of magnesia 45 gms. No fever.

Sept. 18. Phenocoll 1.5 gm. at 4 A.M. The attack begins at 6.30; bilious vomiting; hematuric urine. Violent cephalalgia persists.

Sept. 19. The night has been good. The patient is out of bed; there is no fever.

Sept. 20. Phenocoll 1.75 gm. The patient, without fever, feels very tired. Bilious vomiting at 11 o'clock.

Sept. 21. Pretty fair day; no fever; icteric complexion. Absolute anorexia.

Sept. 22. Phenocoll 2 gms. No fever. Urine diminished and has returned to a normal color.

Sept. 23. No fever. Milk diet. Malarial anemia.

Sept. 24. Phenocoll 1.75 gm. No fever; headache; insomnia. Gave a little bromide of potassium and iodide of sodium.

Sept. 25. General lassitude.

Sept. 26. Phenocoll 1.75 gm. Absolute apyrexia.

Sept. 27. The patient, who is very anemic, goes away to spend a few days at Saint-Leu. He has no more fever, and is able to resume his work on Oct. 18, at the workshops of the company.

Obs. XI.—Sin..., æt. 48, a fitter in the workshops of the F. A. Co. In 1886 he was an engineer in the Railroad Company from Dakar to Saint-Louis (Senegal). Very violent attacks of fever, of the bilious type. In spite of quinine, these attacks persisted so that he was compelled to leave Senegal after a stay of nine months. He then came to Arzew, where he had slight attacks every two or three months, in spite of treatment by quinine and arsenic. Since about ten days he is suffering from slight febrile movements with chills and hepatic and splenic pain. Spleen and liver enlarged.

Sept. 17. 45 gms. of sulphate of magnesia in the morning. Phenocoll 1.5 gm. at night.

Sept. 18. The patient has slept better, has less muscular pain than formerly. Phenocoll 1.5 gm. at night.

Sept. 19. The night has been better still, no more insomnia; no more painful dryness of the skin. Phenocoll 1 gm. at night.

Sept. 20. The amelioration is marked. Phenocoll 1 gm.

Sept. 21. The patient feels no more discomfort of any sort.

I have often seen this patient again, and he has had no further trouble.

Obs. XII.—Pierre d'H., æt. 39, a fitter in the workshops of the company. In 1879, at Debrousseville, where the workshops then were, he had violent malarial attacks; comatose access lasted, it is stated, for fifty hours. Is at Arzew since 1887. Has used a great deal of quinine, without being able to stop his trouble. There is marked deafness. Since about ten days feels very tired; chills and fever, and then perspirations during which he feels a relative degree of comfort. Spleen large and tender, sub-icteric complexion.

Sept. 18. Phenocoll 1.75 gm.

Sept. 19. Better night, feels easier. Phenocoll 1.5 gm.

Sept. 20. No more malaise, no chills. Phenocoll 1.5 gm.

Sept. 21. Phenocoll 1.5 gm. Has had a very good day.

Sept. 22. No more lassitude: feels stronger. Phenocoll 1.5 gm.

Sept. 23. The patient no longer feels ill at all. From that period on to the time of writing, Oct. 30, he has felt no more of the troubles for which he had sought my advice.

Obs. XIII.—Juliane G., æt. 28, Workman in a factory. Seven years ago, at Sainte-Barbe-du-Tielat, had violent attacks of fever, which lasted for ten consecutive months notwithstanding the use of quinine. Lives in Arzew since one year. I was called to attend him in the beginning of the month of August for typical quotidian attacks; hydrobromate of quinine, mixture with arseniated extract of cinchona. The attacks ceased.

Sept. 19. Fresh onset of fever; spleen painful, weakness very marked, leaden complexion. Phenocoll 1.5 gm.

Sept. 20. Apyrexia; patient out of bed, but complains of his left side. Painted with tincture of iodine. Phenocoll 1.50 gm.

Sept. 21. No febrile movement; patient feels better. Phenocoll 1.5 gm.

Sept. 22. No fever; general lassitude still very marked; splenic pain nearly gone. Phenocoll 1.5 gm.

Sept. 23. Appetite returning, but the patient is still much weakened, no fever. Phenocoll 1.25 gm.

Sept. 24. The patient feels well; but is very anemic. The phenocoll is stopped.

On Oct. 8, the patient was well enough to resume his work. He was seen again on Oct. 30, and had had no further trouble.

Obs. XIV.—Emma S., æt. 8½. I had treated her two months before for febrile attacks of the quotidian type. Hydrobromate of quinine and arseniated extract of cinchona. For the last three days has had fresh attacks always beginning at about 6 A.M.

Sept. 21. Patient seen in the evening; general muscular pain, spleen tender on pressure; no fever; perspiration has been very abundant. Phenocoll 75 cg. to be taken during the night, in three doses.

Sept. 22. Light attack. Temperature 38.6° C. Slight headache; there have been no chills.

Sept. 23. The patient has taken 1 gm. of phenocoll in four doses. No attack, the child feels fairly well and goes to spend the day at the sea-side.

Sept. 24. Through forgetfulness, the child has taken no phenocoll; at 9 o'clock a light attack of short duration.

Sept. 25. Phenocoll 75 cg. during the night. No fever, the child feels well.

Sept. 26. Phenocoll 75 cg. No attack.

Sept. 27. The child is quite well.

Until Oct. 9, there were no further attacks, but upon that day the child was compelled to go to bed with violent chills succeeded by fever and sweating. Phenocoll 75 cg. was given daily for three days, and, up to this date, Oct. 30, there have been no further attacks.

Obs. XV.—D., æt. 31, a blacksmith in the workshops of the F. A. Co. A very robust man. Malarial since 1890. At that time remained for three months in the military hospital of Arzew. Quinine ceasing to have any effect upon him, Dr. Petit advised him to leave the country. He remained in Oran for about two months. Decided improvement, but still had slight accesses.

Sept. 23. A violent attack at 6 P.M.

Sept. 24. The attack stopped at 3 A.M., with violent perspiration. When I saw the patient, he was quite exhausted. Phenocoll 1.75 gm.

Sept. 25. No attack of fever yesterday, but abundant sweats at 7.30. At 2 P.M. a violent bilious attack, vomiting, diarrhea. Intense cephalalgia.

Sept. 26. The patient has severe pains in the limbs; icteric complexion. As the attacks appear to be taking on the tertian type, no phenocoll is given.

Sept. 27. Good night. Phenocoll 2 gms. No attack. The bilious diarrhea persists. Salicylate of bismuth and salol.

Sept. 28. Day good; no phenocoll.

Sept. 29. Patient is out of bed; feels pretty well. Phenocoll 2 gms. No attack. Patient eats a little.

Sept. 30. Patient is better.

Oct. 1. Patient is able to resume his work, but takes phenocoll 1.75 gm. in the morning.

Until Oct. 8, he had no further attack, but on that day was obliged to take to his bed. I again gave phenocoll in 2 gms. doses every other day

for a week, giving it on this occasion in solution in sweetened water.

On Oct. 14, the patient definitely resumed his work and has remained well until now.

Obs. XVI.—Concha S., æt. 9. A weakly girl. Attack of fever a month ago, quotidian at the same hour, accompanied by violent enteralgia. Treatment by quinine stopped the attacks.

Oct. 8. A fresh attack at 11 A.M.; violent abdominal pains; no diarrhea, no constipation; splenic region tender and dull on percussion.

Oct. 9. The child took phenocoll 75 cg. in the morning; the attack appeared notwithstanding, at 11 o'clock.

Oct. 10. Phenocoll 1 gm. in sweetened water. No fever, no abdominal pains.

Oct. 11. Phenocoll 75 cg. in solution. No fever.

Oct. 12. Phenocoll 50 cg.; no fever, the child has resumed her usual cheerfulness and eats well.

Oct. 13. Phenocoll 50 cg. The child is quite well and the phenocoll is stopped.

Oct. 25. Slight return of the fever at 7 P.M.

Oct. 26. Phenocoll 75 cg. during the day; the fever does not reappear.

Oct. 27. The child has passed a good night; phenocoll 75 cg. No fever.

Oct. 28. The child is quite well. Phenocoll 50 cg.

Up to this date, Nov. 6, the accesses of fever have not reappeared.

Obs. XVII.—Jeanne F., æt. 4. Gastro-enteritis in infancy, defective alimentary hygiene. Habitual constipation.

Oct. 11. Attack of fever at 7.30 A.M. Child complains of cold, goes to bed and requests to be covered up. The mother notices that her lips have become blue. Later on her skin becomes burning hot. No sweats.

Oct. 12. No sign of fever. The child plays.

Oct. 13. Fresh attack, identical with the preceding one and occurring at the same hour.

Oct. 14. No attack. Castor oil 20 gms.

Oct. 15. The febrile seizure has anticipated its usual hour, although the child took phenocoll 60 cg. in sugared water. At nine the child wishes to get up, the attack is over.

Oct. 16. No fever in the morning. Slight febrile seizure during the day.

Oct. 17. Phenocoll 50 cg. in the morning in sweetened water. Very slight febrile movement in the evening.

Oct. 18. The child is well. Phenocoll 50 cg. No access.

Oct. 19. Phenocoll 50 cg. No fever.

Oct. 20. Phenocoll 50 cg. No fever.

Up to Oct. 26, the child remained well. Upon that day a slight access.

Oct. 27. Child well. Nothing abnormal.

Oct. 28. Phenocoll 50 cg. No fever. The child is very cheerful.

Oct. 29. Nothing of note.

Oct. 30. Phenocoll 50 cg.

Oct. 31. The phenocoll is stopped, and till the present time there has been no further attack.

Obs. XVIII.—Jean S., æt. 19. A very strong lad. Malarial since two years. The attacks have persisted for five consecutive months. Treatment by quinine. Violent ringing in the ears.

Oct. 12. At 7 A.M., a violent bilious attack. Abundant vomiting and diarrhea. Icteric hue of the conjunctivæ. Profuse sweats. Temp. 39.8° C. At 3 P.M. the attack is over. Splenic pain.

Oct. 13. Patient took 2 gms. of phenocoll this morning, divided in four doses in sugared water. No fever, general muscular pain.

Oct. 14. Took this morning phenocoll 1.75 gm. No fever, but abundant sweats. Day good.

Oct. 15. Phenocoll 1.5 gm. this morning. No fever, the patient is up and feels well.

Oct. 16. Phenocoll 1.5 gm. The patient has quite recovered and is able to go to work.

Since that time the patient is in perfect health and has had no more fever.

Obs. XIX.—Joseph K., 26 years. Lives at Sainte-Leonie, near Arzew, since twelve years. Malarial since 1891. Has been particularly ill this year, and notwithstanding his constant use of quinine (he states that he has taken the contents of two bottles each containing 15 gms. of quinine in the space of two months) he still suffers from accesses returning every other day. Spleen swollen. Sub-icteric complexion. Paludean anemia.

Oct. 17. This is his fever day. Gave 2 gms. of phenocoll in a little sweetened water in four doses.

Oct. 18. Says that yesterday he only had a few small chills, but no fever.

Oct. 19. Phenocoll 2 gms. No febrile attack.

Oct. 20. The patient feels less tired, the appetite seems to be returning.

Oct. 21. Phenocoll 2 gms. No fever. The patient feels much better. The earthy tint of the skin seems to be disappearing.

Oct. 22. The patient feels better. He is able to go to work.

Oct. 23. Phenocoll 1.75 gm. No attack.

Oct. 24. General good condition.

Oct. 25. Phenocoll 1.5 gm.

The patient, now feeling very well, ceases the treatment.

Obs. XX.—A., æt. 50. Station Master at La Macta, one of the most unhealthy points of the district, where he has been living for 13 years. Umbilical hernia. Malarial for 10 years. In the beginning of his sojourn he had violent attacks of fever. Has taken sulphate of quinine for as much as 15 days running. Yet the attacks have returned every year, though less violent. Very painful tinnitus aurium. No longer has the same violent attacks as formerly but complains every evening of malaise, splenic pain and chills, notwithstanding that he takes quinine in pills containing 80 cg., which formerly were sufficient. The spleen is much hypertrophied.

Oct. 21. Gave him 10 gms. of phenocoll, directing him to take 2 gms. on each of the first two days, 1.5 gm. on the two succeeding days, and 1 gm. each on the other three days.

On Oct. 29, the patient writes that he has not felt the slightest fever; and has had no more trouble.

From a careful study of the cases above related, it seems to me that we cannot fail to recognize the fact that we are dealing with a remedy which is in no way inferior to quinine in its anti-malarial properties, and which is usually, not to say always, admirably well borne even in

large doses without the slightest inconvenience.

Phenocoll hydrochloride should be given in wafers or in a mixture; I may say that in the latter form its efficacy has seemed to me to be greater, and more lasting, especially in the cases where the gastric functions were impaired; this is doubtless due to its great solubility, and hence to its easier absorption; a little sweetened water has always sufficed to conceal its taste, which, I repeat, is not at all disagreeable. This is an advantage which will be appreciated by my pediatric confreres, who will find in this drug a sure antithermic and one easy of administration to their little patients.

It should be given in divided doses, five hours at the maximum, and three hours at least before the occurrence of the impending attack.

The daily doses should be of 2 gms. in adults, and from 50 to 75 cg. in children of 4 to 10 years old.

At the beginning of my experiments, I gave none but small doses of one gramme to 1.25 gm. of the drug; this should not be the rule, for, though I noted some happy results, I saw that in many of my patients I only postponed the hour of the attack, and lessened its intensity, without suppressing it altogether.

In my district, where old malarial cases are legion, and where my patients are nearly all strongly intoxicated with the malarial poison, I was compelled early to reach doses of 2 gms., and even two and a half grammes. The efficacy of the drug then was plainly shown, and I am convinced that that is the minimum daily dose to be given to adults from the beginning; I even think that in some of our other colonies it will have to be still further increased, to avoid severe disappointments.

The drug should be used for six or seven days, or else new febrile attacks will occur after a few days of remission, since, as a matter of fact, the useful effect of the remedy appears to be of rather short duration, as has been asserted by Eichorst.

In order to prevent relapses, therefore, it will be best to have recourse to consecutive treatment, as Laveran has advised anent quinine, for the parasites of malaria, arrested in their development for a short time only, would swarm once more, and everything would have to be begun over again.

I believe, in effect, that without causing the death of the hematozoa themselves, as Golgi asserted in regard to quinine, a doctrine now recognized as being erroneous (Jaccoud, Baccelli), the hydrochloride of phenocoll causes in them such a loss of vitality that they are unable for some time to reach the phasis of sporulation, and we know (a proposition advanced by Baccelli) that "if in the blood are found hematozoa in a condition of segmentation or sporulation, one may predict an attack." This time passed by, the same hematozoa might again regain their pristine vitality, reach the phasis of segmentation, and give rise to new attacks.

I, therefore, insist particularly upon this point, *i. e.*, the absolute necessity of continuous treatments, with intervals

of a week to a fortnight between each one.

Under the influence of phenocoll the attacks become less violent, shorter, and even sometimes disappear after a few doses; the cephalalgia rapidly disappears, for the antineuralgic properties of phenocoll seem to be as marked as those of antipyrin, and, finally, a fact worth noting, the splenic pains, so severe in some patients, disappear quite fast, while the spleen becomes smaller.

When I state, in concluding, that I have never observed any toxic symptom, nor cyanosis, collapse, or tinnitus aurium, nor any gastric pain whatever; that I have been able to give the drug to nursing mothers without harm to their children; that the only phenomena noted have been, in a few patients, abundant perspirations, I shall have sufficiently called attention to the superior antimalarial properties of phenocoll hydrochloride. And I hope soon to see this remedy take a place in current practice and be utilized by the profession, as I am persuaded beforehand that it will afford them the best of results.

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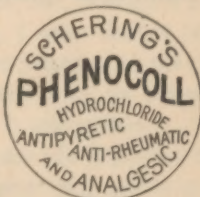


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